

# ***EcoSystems Management Associates, Inc.***

Oceanographic, Geophysical and Underwater Engineering Services

25 August 2015

Statewide Geophysical Survey Coordinator  
California State Lands Commission  
Mineral Resources Management Division  
200 Oceangate, 12<sup>th</sup> Floor  
Long Beach, CA, 90802-4331

**Subject: Proposed Simpson Humboldt Ocean Outfall Multibeam Bathymetric Survey  
and Video Inspection**

Dear Statewide Geophysical Survey Coordinator:

Please find attached our pre-survey requirements for a bathymetric survey of the former Simpson mill outfalls, using a multibeam echosounder (MBE) and an underwater camera system ocean outside of Humboldt Bay near Fairhaven and Eureka, CA. The acoustic source will consist of a RESON 7125 with a dual frequency system (200/400 kHz), for the purposes of this survey, a frequency of 400kHz will be utilized. The system consists of a surface transceiver with integrated multiport card and a standard 25m cable run to the transducers. The purpose of this survey is to assess the location and determine the condition of the ocean outfalls at the former Simpson mill location in Humboldt County near Fairhaven, California.

Figure 1 shows the location of the survey. The survey area will occur offshore of the mouth of Humboldt Bay in an area approximately 800 x 2000ft in size, and in water depths of approximately 10-35ft (-10 to -35ft MLLW datum). Survey operations will be conducted 0.5 nautical miles (NM) off shore. The survey line plan includes approximately 37 multibeam bathymetry lines and 6 video lines (this is dependent on conditions encountered on-site) (Table 1).

The survey operation will be conducted between September 28 and 30, 2015. The best weather for the survey of these near shore outfalls is likely to occur during the fall seasonal transition from typical northerly to southerly storms. To survey the outfall as far inshore as possible, into the surf zone, the survey will be done on the highest daytime tides possible. The multibeam survey effort is expected to take 3-4 hours and following the multibeam survey, a mini-ROV or drop-video camera will be utilized to obtain video of portions of the primary outfall line with the time available. Only one day of on water survey effort is planned. Operations will be conducted from the 35' multibeam survey vessel "Ugle Duck". Survey operations will be conducted during daylight hours only.

Equipment will include the following:

1. RESON 7125 multibeam echosounder with a dual frequency system (200/400 kHz), utilizing 400kHz for the purpose of this survey.
2. Video Ray Pro4 Inspection ROV.

The RESON 7125 multibeam echosounder with a dual frequency system (200/400 kHz) is a high-resolution multibeam sonar system that measures relative water depths over a 140° (or 165°) wide swath perpendicular to the vessel's track. The MBE is used for high resolution surveys for inland or coastal areas. Detailed equipment specifications for RESON 7125 multibeam echosounder is in Exhibit F.

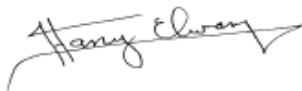
As per Mitigation Measure FISH-2 in Exhibit H of the general permit, the permittee shall implement the following to minimize interaction with fishing gear that may be present within the survey area: (1) the geophysical vessel (or designated vessel) shall traverse the proposed survey corridor prior to commencing survey operations to note and record the presence, type, and location of deployed fishing gear (i.e., buoys); and (2) no survey lines within 30 m (100 feet) of observed fishing gear shall be conducted. The survey crew shall not remove or relocate any fishing gear; removal or relocation shall only be accomplished by the owner of the gear upon notification by the survey operator of the potential conflict.

An initial inspection of the Simpson Humboldt outfalls, following their survey by MBE, will be conducted from an un-anchored "live-boat" with a towed ROV/camera used to document the outfall condition. The position of the vessel will be recorded with the onboard survey system and the position of the ROV/camera will be recorded as an approximate offset from the vessel position.

Enclosed in this application you will find: (1) Exhibit G, (2) Exhibit C, (3) Exhibit E, (4) Exhibit F, (5) Marine Wildlife Contingency Plan (which covers the MM BIO 1-9 specifications listed in Exhibit H), and (6) the oil spill contingency Plan (which covers the MM HAZ-1 -3 specifications listed in Exhibit H).

Sincerely,

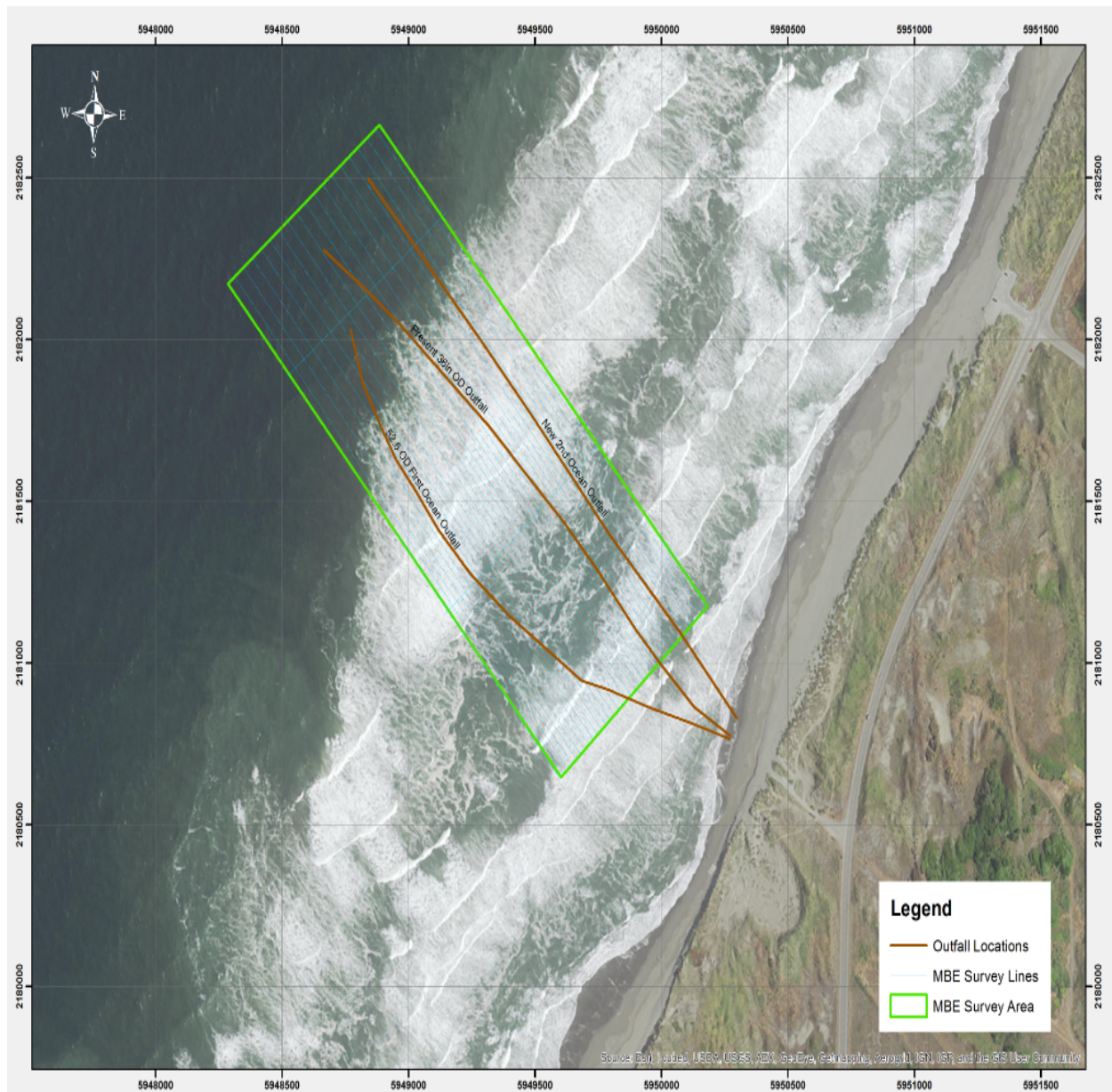
**ECOSYSTEMS MANAGEMENT ASSOCIATES, INC.**



Hany Elwany, Ph.D.  
President

Attachments (Electronic):

1. Exhibit G checklist
2. Exhibit C
3. Exhibit E
4. Exhibit F
5. Marine Wildlife Contingency Plan
6. Oil Spill Contingency Plan



**Figure 1. Map showing location of the proposed multibeam sonar survey outside of Humboldt Bay.**

**Table 1. GPS Coordinates (NAD83) for the start and end points of each survey line.**

Line	Long Start	Lat Start	Long End	Lat End
1	-124.2150106035	40.7984072788	-124.2127635612	40.7998562945
2	-124.2126807097	40.7964394577	-124.2105044669	40.7979395724
3	-124.2109507230	40.7951112720	-124.2157895879	40.7992397424
4	-124.2108333947	40.7951969146	-124.2156664933	40.7993204482
5	-124.2107161012	40.7952825290	-124.2155434346	40.7952825290
6	-124.2105987713	40.7953681440	-124.2154203394	40.7994818589
7	-124.2104814411	40.7954537588	-124.2152972439	40.7995625644
8	-124.2103641467	40.7955393728	-124.2151741843	40.7996432691
9	-124.2102468159	40.7956249874	-124.2150510882	40.7997239743
10	-124.2101294858	40.7957106294	-124.2149279927	40.7998047069
11	-124.2110081654	40.7950773570	-124.2134340635	40.7971372762
12	-124.2109225122	40.7951800482	-124.2133127164	40.7972194288
13	-124.2108011304	40.7952622263	-124.2131913337	40.7973016095
14	-124.2106797473	40.7953443769	-124.2130699499	40.7973837626
15	-124.2105583639	40.7954265274	-124.2129485657	40.7974659155
16	-124.2104369802	40.7955086777	-124.2128271813	40.7975480684
17	-124.2103156332	40.7955908547	-124.2127058335	40.7976302478
18	-124.2101942490	40.7956730048	-124.2125844485	40.7977124004
19	-124.2100728644	40.7957551547	-124.2124630631	40.7977945528
20	-124.2100121905	40.7957962430	-124.2148049322	40.7998854111
21	-124.2099535247	40.7958390501	-124.2123416775	40.7978767051
22	-124.2098361928	40.7959246643	-124.2122202915	40.7979588573
23	-124.2097188607	40.7960102784	-124.2120989053	40.7980410094
24	-124.2096015643	40.7960958916	-124.2119775196	40.7981231887
25	-124.2094842316	40.7961815054	-124.2118561328	40.7982053405
26	-124.2093668994	40.7962671466	-124.2117347817	40.7982874915
27	-124.2092496022	40.7963527594	-124.2116133943	40.7983696430
28	-124.2091322685	40.7964383729	-124.2114920065	40.7984517944
29	-124.2090149346	40.7965239862	-124.2113706194	40.7985339732
30	-124.2098948588	40.7958818572	-124.2146818352	40.7999661160
31	-124.2097775268	40.7959674714	-124.2145587379	40.8000468207
32	-124.2096601945	40.7960530854	-124.2144356765	40.8001275245
33	-124.2095428980	40.7961386985	-124.2143125786	40.8002082290
34	-124.2094255660	40.7962243397	-124.2141894805	40.8002889333
35	-124.2093082328	40.7963099534	-124.2140664181	40.8003696367
36	-124.2091909354	40.7963955662	-124.2139433194	40.8004503408
36	-124.2090736016	40.7964811796	-124.2138202203	40.8005310447
37	-124.2089562675	40.7965667928	-124.2096677658	40.7971738897

## **EXHIBIT G**

### **California State Lands Commission Presurvey Notice Requirements for Permittees to Conduct Geophysical Survey Activities**

All parts of the Presurvey Notice must be adequately filled out and submitted to the CSLC staff a minimum of twenty-one (21) calendar days prior to the proposed survey date to ensure adequate review and approval time for CSLC staff. Note that one or more of the items may require the Permittee to plan well in advance in order to obtain the necessary documentation prior to the Notice due date (e.g., permits from other State or Federal entities).

Notice. If "No" is checked for any item, please provide an explanation in the space provided. If additional space is needed, please attach separate pages.

**Yes    No**

- |                                     |                                     |  |
|-------------------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Geophysical Survey Permit Exhibit F  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Permit(s) or Authorization from other Federal or State agencies (if applicable)<br>Explanation: _____<br>_____   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 21-Day Written Notice of Survey Operations to Statewide Geophysical Coordinator/   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | U.S. Coast Guard Local Notice to Mariners/   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Harbormaster and Dive Shop Notifications<br>Explanation: _____<br>_____  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Marine Wildlife Contingency Plan<br>Explanation: _____<br>_____  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Oil Spill Contingency Plan<br>Explanation: _____<br>_____  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Notification of Geophysical Survey Equipment Used<br>Explanation: _____<br>_____   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Verification of Equipment Service and/or Maintenance (no older than 12 months; must verify sound output)<br>Explanation: _____   |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Permit(s) or Authorization from California Department of Fish and Wildlife for surveys in or affecting Marine Protected Area(s) (if applicable)<br>Explanation: <u>Survey area is away from the nearest MPA.</u> |

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NOTE: CSLC staff will also require verification that current biological information was obtained and transmitted as outlined in Section 5 of this permit

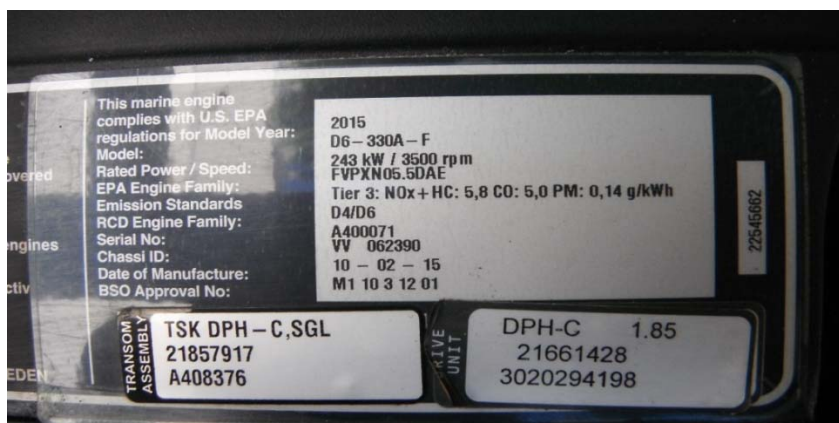
## **EXHIBIT C**

### **ENGINE TUNING, ENGINE CERTIFICATION, AND FUELS**

Survey operations will be conducted by the 35' multibeam survey vessel "Ugle Duck" (Figure 1). Its main method of propulsion is through a single Volvo Penta Diesel engine. This vessel has an EPA Tier 3 certified diesel engine (Figure 2 and 3). At cruising speed (approximately 12-15 knots), this vessel burns approximately 11.5 gallons per hour. Therefore, on an 8-hour day of survey operations, fuel consumption would be 92 gallons maximum per day. It is expected fuel consumption will be much less than this, as survey operations require a significantly slower vessel speed of approximately 2 knots. Since this is a Tier 3-certified engine and less than 585 gallons of fuel will be used per day, emissions do not exceed the daily NOx emissions of 100 pounds per day.



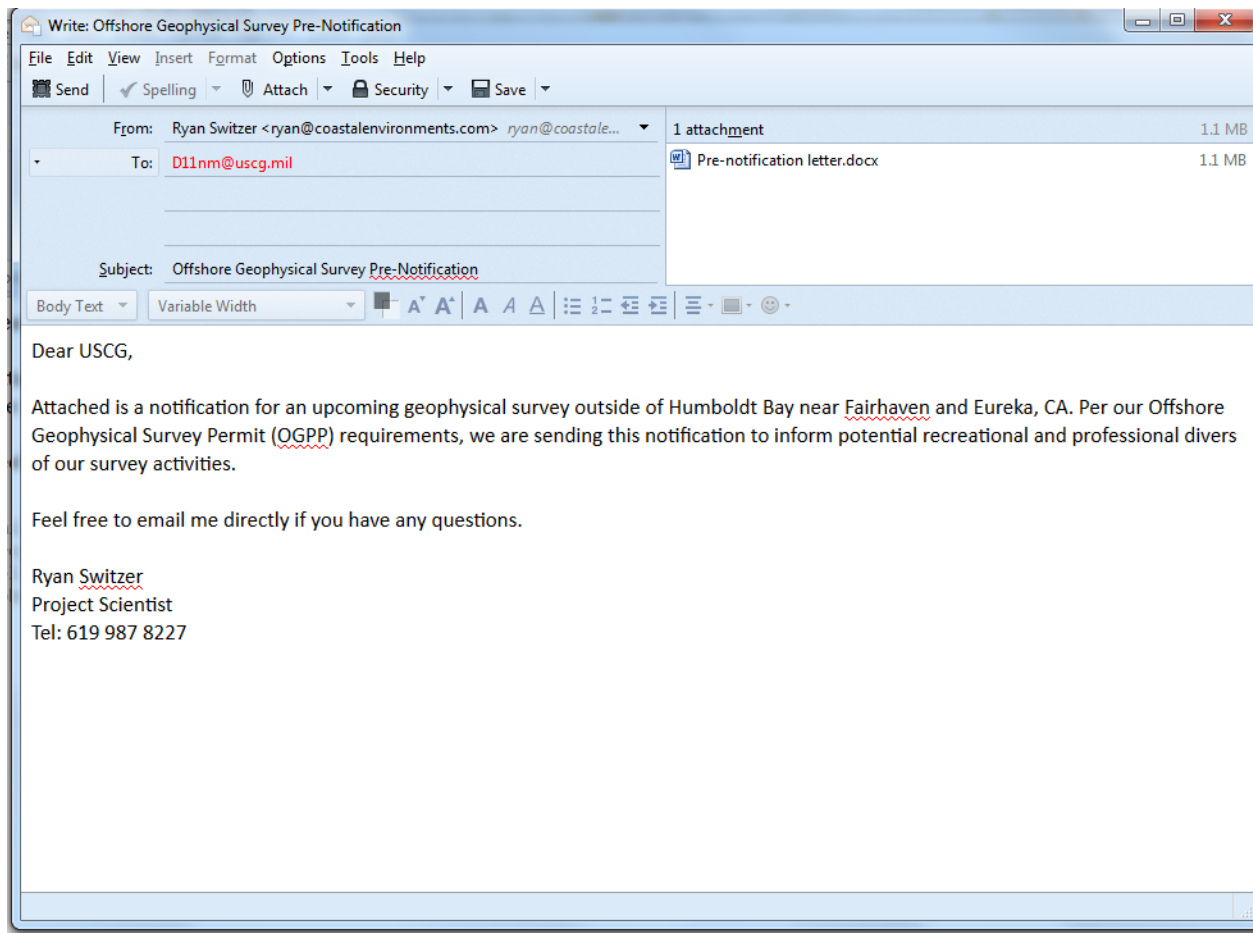
**Figure 1. Survey Vessel Ugle Duck.**



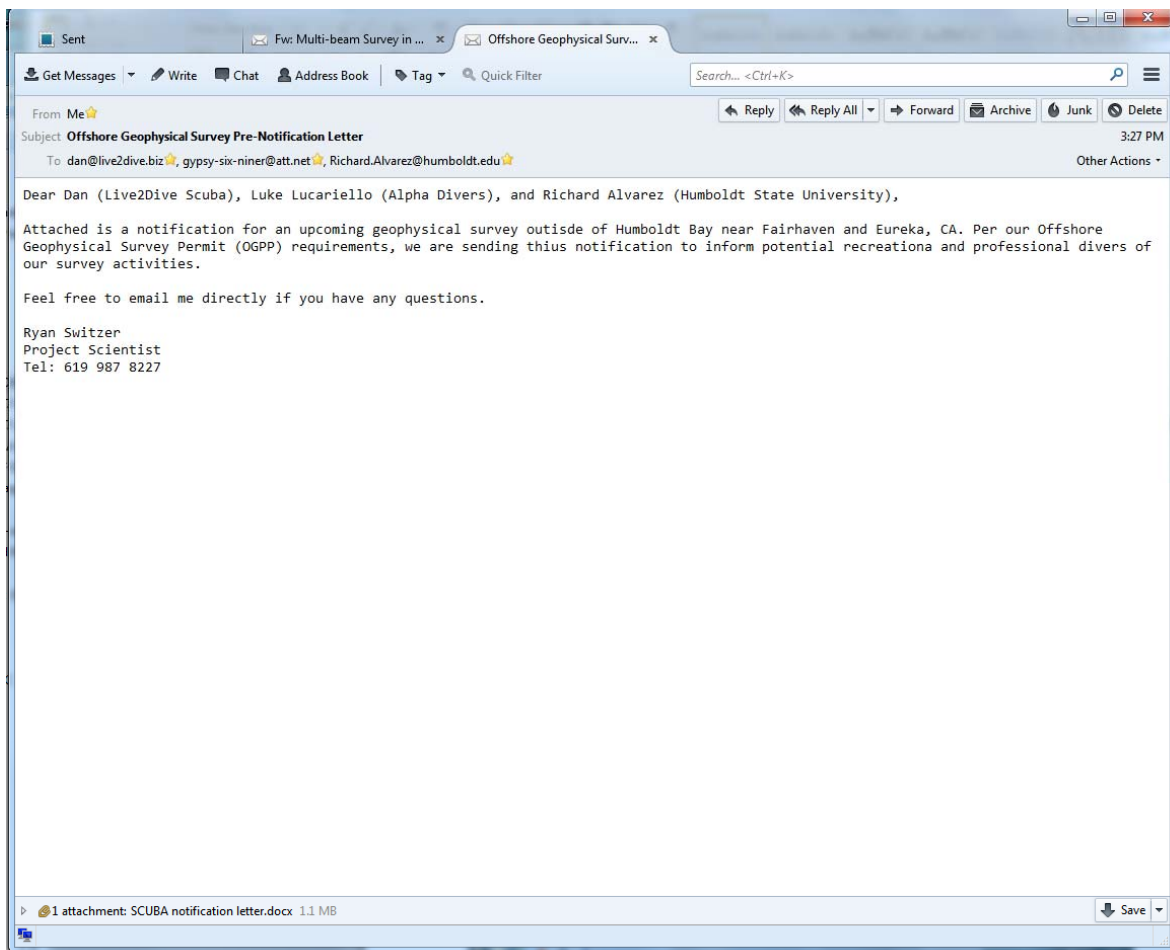
**Figure 2. Vessel Ugly Duck engine plate.**

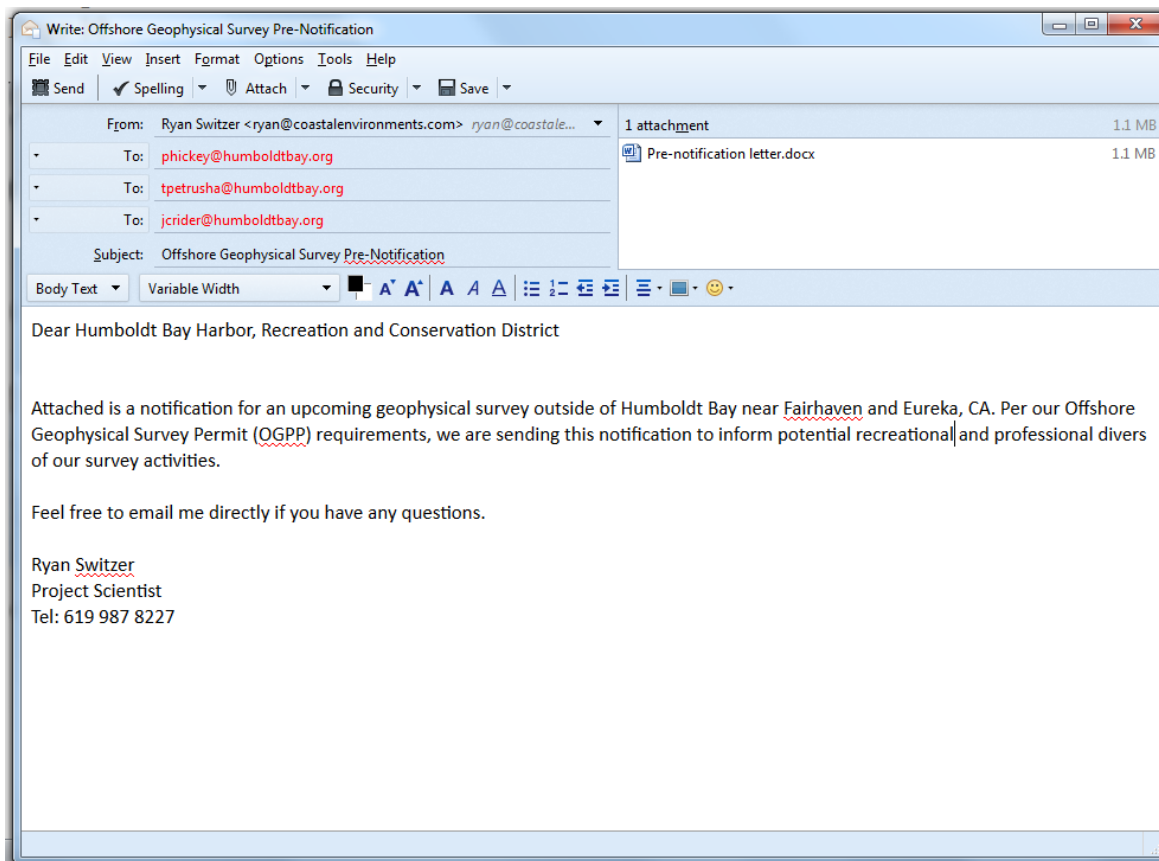
## EXHIBIT E

### CONFIRMATION OF PRE-NOTIFICATION



Statewide Geophysical Survey Coordinator  
California State Lands Commission  
Subject: Proposed Multibeam Sonar Survey for Outside of Humboldt Bay  
25 August 2015  
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## **EXHIBIT F**

### **PRESURVEY NOTIFICATION FORM**

Applicant/Permittee's Mailing Address		Date:	25 August 2015	
Ecosystems Management Associates	Jurisdiction: Federal	State	x	Both
2166 Avenida de la Playa, Suite E	If State: Permit #PRC		8536.9	
La Jolla, CA, 92037	Region:	Statewide		
	Area:			

### **GEOPHYSICAL SURVEY PERMIT**

Check one: ☒ New survey \_\_\_\_\_ Time extension of a previous survey \_\_\_\_\_

ECO-M (Applicant/Permittee) will conduct a geophysical survey offshore California in the survey area outlined on the accompanying navigation chart segment. If you foresee potential interference with commercial fishing or other activities, please contact the person(s) listed below:

#### FEDERAL WATERS (outside 3 nautical miles)

- 1) Applicant's representative
- 2) Federal representative (e.g., Bureau of Ocean Energy Management [BOEM] or National Science Foundation [NSF])

NOTE: Any comments regarding potential conflicts in Federal waters must be received by the Applicant's Representative and lead Federal agency within ten (10) days of the receipt of this notice.

#### STATE WATERS (Inside 3 nautical miles)

- 1) Permittee's representative
- 2) CSLC representative

NOTE: Any comments regarding potential conflicts in State waters should be received as soon as possible by the Permittee's representative, no more than fifteen (15) days after the receipt of this notice.

1. Expected Date of Operation Between September 28th and 30th, 2015
2. Hours of Operation 0600-1600 hrs
3. Vessel Name Ugle Duck
4. Vessel Official Number Washington Registration WN4327NK HIN# WNZ7444DA101

5. Vessel Radio Call Sign N/A - no Longer required by Feds
6. Vessel Captain's Name David B Hericks
7. Vessel will monitor Radio Channel(s) 16
8. Vessel Navigation System DGPS
9. Equipment to be used RESON 7125 multibeam echosounder with a dual frequency system (200/400 kHz)

- a. Frequency (Hz, kHz)
- Multibeam - 400 kHz
- b. Peak Source level (dB re 1  $\mu$ Pa at 1 meter (m) [root mean square (rms)])
- Multibeam Sonar = 223 dB
- c. Number of beams, across track beamwidth, and along track beamwidth
- # beams = 512EA/ED at 400kHz, 256EA/ED at 200kHz
  - Across track transmit beamwidth = 1° at 200kHz & 0.5° at 400kHz
  - Along track transmit beamwidth = 2° at 200kHz & 1° at 400kHz
- d. Pulse rate and length
- Max Ping Rate: 50Hz ( $\pm$ 1Hz)
  - Pulse Length: 30 $\mu$ sec – 300 $\mu$ sec Continuous Wave
- e. Rise time
- Multibeam – 0.05 ms, 12.5 -200  $\mu$ sec, 165  $\mu$ sec
- f. Estimated distances to the 190 dB, 180 dB, and 160 dB re 1  $\mu$ Pa (rms) isopleths

Source	Dist. To160 dB (m)	Dist. To 180 dB (m)	Dist. To190 dB (m)
Multibeam	150	36	5

- g. Deployment depth Hull mounted
- h. Tow speed 3 knots
- i. Approximate length of cable tow N/A – system mounted to vessel

Applicant's Representative:

Dr. Hany Elwany  
President, EcoSystems Management Assoc.  
2166 Avenida de la Playa, Suite E  
La Jolla, CA, 92037  
hany@coastalenvironments.com

California State Lands Representative

Richard B. Greenwood  
Statewide Geophysical Coordinator  
200 Oceangate, 12th Floor  
Long Beach, CA 90802-4331  
(562) 590-5201

BOEM Representative

Joan Barminski  
Chief, Office of Reservoir & Production  
770 Paseo Camarillo  
Camarillo, CA 93010  
(805) 389-7707

Other Federal Representative (if not BOEM):

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**ECOSYSTEMS MANAGEMENT ASSOCIATES, INC.**

**MARINE WILDLIFE CONTINGENCY PLAN**

Submitted to

California State Lands Commission  
Mineral Resources Management Division  
200 Oceangate, 12<sup>th</sup> Floor  
Long Beach, CA 90802-4331

by

EcoSystems Management Associates, Inc.  
2166 Avenida de la Playa, Suite G  
La Jolla, CA, 92037

25 August 2015

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## **ECOSYSTEMS MANAGEMENT ASSOCIATES, INC.**

### **MARINE WILDLIFE CONTINGENCY PLAN**

#### **1.0 INTRODUCTION**

This plan is intended to serve as a guide to operations to avoid significant impacts to marine wildlife that may occur during a geophysical survey. This plan is prefaced by a brief description of the project and the regulatory basis for marine wildlife protection followed by:

- The species likely to be present during the survey and the special status species of concern;
- A proposed operational plan for the company performing the survey, EcoSystems Management Associates, Inc. (ECO-M), to exercise caution while marine wildlife is present; and
- The procedure to follow should a collision occur between the survey vessel and marine wildlife.

#### **2.0 REGULATORY BASIS**

Species that are either currently in danger or soon likely to be in danger of extinction throughout all or a portion of its range are protected by the Endangered Species Act of 1973. The United States Fish and Wildlife Service (USFWS), and the National Oceanic and Atmospheric Administration Fisheries (NOAA), National Marine Fisheries Service (NMFS) implement the Endangered Species Act. During the consultation with NMFS to issue a permit for the offshore geophysical survey, it was determined no incidental take permits are required to use the equipment and conduct the fieldwork. Regarding the consultation, the U.S. Army Corps of Engineers determined proposed activities may affect, but were not likely to adversely affect listed species (i.e., informal consultation). NMFS and USFWS have concurred with this statement.

NMFS also implements the Marine Mammal Protection Act of 1972, which protects all marine mammals within U.S. waters from intentional killing or harassment. Any accidental contact with marine wildlife during the course of the survey will be promptly reported to the NMFS Stranding Coordinator, Southwest Region, Long Beach.

The California State Lands Commission (CSLC) protects the natural environment for scenic and wildlife habitat values for the public trust. State agencies require marine mammal monitoring for any survey operations. The marine mammal population in general includes whale species, porpoises, dolphins, pinnipeds, and others. Some species are migrants that pass through central California waters on their way to calving or feeding grounds elsewhere, some are seasonal visitors that remain for weeks or months; others are resident for much or all of the year.

### **3.0 OPERATIONAL MEASURES FOR REDUCING IMPACTS TO MARINE MAMMALS AND TURTLES**

ECO-M's project operations will utilize the following procedural techniques to limit the imposition of survey activities on any marine animals known to be within a sphere of influence. The survey vessel will have personnel on board during operations that are NOAA-approved marine wildlife monitors. The monitors will have authority to influence the operation of the vessel in regard to marine wildlife interaction but will be contravened by the captain of the vessel in matters of vessel and crew safety.

#### **3.1 PRE-SURVEY ACTIVITIES**

ECO-M contacted the NOAA Long Beach Office staff and a local whale-watching operation (Aquarium of the Pacific in Huntington Beach) to acquire information on the current composition and relative abundance of marine wildlife offshore as well as any pinniped haul out sites. From these sources, it was determined that whale activity is expected to be low at this area during the time of surveys, as September is the beginning of whale season for gray or blue whale migrations. Additionally, grey and blue whales generally travel greater than one mile (5,280 ft.) offshore, and this survey will be conducted approximately 2,000 ft. offshore. According to Justin Greenman, Assistant Stranding Coordinator at the NOAA Long Beach Office, this area is not near any known pinniped haul out sites or pinniped rookeries (Figure 1). This information will be conveyed to the vessel operator and crew, survey party chief, and onboard Marine Wildlife Monitors (MWMs). Additionally, one day prior to survey activities, the NOAA Long Beach office and the Aquarium of the Pacific will be contacted to get an update on marine wildlife sightings in the area. This information will be conveyed to the captain and crew prior to the survey.

An initial or board review of environmental responsibility of project operations will be undertaken at the beginning of each segment of the project. When new personnel will be in the crew, this training will be repeated at least for those new to the crew. They will be made aware of their individual responsibility and will be shown how to be aware of possible environmental impacts and how to mitigate them within the geophysical survey vessel's operations. Information relating to seasonality, as an indication of the types of animals that might be in our survey area, at the time of survey work will also be presented to the crew(s). A copy of this document will be provided to each member of the geophysical survey team, as well as the crew of our survey vessel.

All personnel will be expected to be consistently aware that they are to be alert to any presence of marine wildlife while they are performing their duties. There are a number of signs/indications of marine wildlife presence and each crew member will be responsible to maintain vigilance for those signs within the constraints of their project duties. Some of those indications are:

- a. Sounds - such as splashing, vocalizations (by animals and birds), and blowing (breathing).
- b. Visual indications - birds aggregating, changes in water character such as areas of rippled water, white water caused by splashing, changes in color or shape of the ocean surface, spume, the disturbance of the normal sea view that can be caused by animals floating, rolling, diving, or leaping.
- c. Smell - on occasion marine organisms can be associated with smell from breath or defecation.
- d. Electronic observation - often the presence of schools of “bait fish” can be seen on some of the geophysical survey equipment. That presence, along with an increasing number of schools, can suggest that this area could possibly be associated with increased feeding activity of marine mammals and thereby suggest that increased awareness efforts should be undertaken. Under these circumstances, ECO-M’s personnel will be alerted to be more observant.

### **3.2 Marine Wildlife Monitors**

At all times during survey activities, one marine wildlife monitor (MWM) will be present on the vessel. The qualifications of the MWM is located in Appendix A of this document. The onboard MWM shall have the authority to stop operations if a mammal or turtle is observed is observed within the specified safety zone. The MWM will be present at the highest practical vantage point on the vessel and will use binoculars to observe the surrounding area. We are requesting to have one MWM present on our boat. A MWM is required because the survey will be using a piece of acoustic generating geophysical equipment (i.e., multibeam echosounder). However, because the piece of equipment is over 200kHz, captain/crew can fulfill this role, upon request, and would be responsible for monitoring for marine wildlife and recording all observations. After speaking to Justin Greenman, Assistant Stranding Coordinator at the NOAA Long Beach office, migrating whales are more likely to be found further offshore (1 mile or more). The offshore extent of our survey boundary will be 0.3 miles from shore; therefore the likelihood of encountering a migratory marine mammal within this area is low. However, in order to avoid any contact with marine mammals within our survey area, we will make contact with the Aquarium of the Pacific, which whale watch at Huntington Beach, and request a heads up if migrating whales are spotted near shore and are heading our direction. We will make contact with these organizations two weeks before the survey, again one day before the survey, then on the day of the survey via VHF radio to request information on migratory whale sightings. We believe this method, coupled with the MWM and the specified radii will avoid any negative contact with marine mammal species.

### **3.3 Operational Measures**

Operational measures to reduce impacts to marine mammals or turtles will include: (1) soft-start technique, (2) acoustic safety zone radii, (3) slow vessel speeds, (4) avoidance of pinniped haul out sites, and (5) limitations on equipment usage.

### *Soft Start Technique*

The soft-start technique will involve initiating each piece of equipment at the lowest practical sound level, increasing the output in steps not exceeding approximately 6 decibels per 5-minute period. During this time, the MWM will monitor the safety zone for marine mammal or turtle sightings.

### *Acoustic safety zone radius*

The safety zone monitoring will follow the protocols outlined in Exhibit H of the Permit (PRC 8536.9). The multibeam echosounder will be operating at a frequency greater than 200 kHz and therefore a safety zone does not need to be observed. In the event a pinniped haul out site is located within 300 m of the survey boundary, ECO-M will take the following measures:

- Not approach within 91 m of the haul-out site (consistent with NMFS guidelines);
- Expedite survey activity in this area in order to minimize the potential for disturbance of pinnipeds on land;
- Have the MWM monitor pinniped activity onshore as the vessel approaches, observing and reporting on the number of pinnipeds potentially disturbed

Initially, ECO-M will make a circuit of the survey area to ascertain if any marine wildlife is apparent in the intended survey area(s). This being done, there are three specific measures to be taken in the event that the vessel appears to be approaching marine mammals on one of the pre-established and specific survey transects. *One:* Stop vessel operations and wait until the animals have passed (this is in case animals are transiting the area). The mammal monitor shall observe and determine if migrating cetaceans are in the area. The captain will not knowingly cause complications with their intended migratory path. *Two:* Shift to another pre-established survey transect thereby avoiding close encounters (this is for animals that are occupying a given area for a period of time). *Three:* Do not begin the survey until observed animals in the survey area have departed or are at such a distance (as noted above) that they will be out of the range of ECO-M's influence. If the marine mammal monitor should sight marine wildlife within the path of the vessel, he/she will report the sighting to the vessel operator. The vessel will then slow down and continue a course that parallels that of the marine mammal. The marine mammal monitor shall have the authority to halt any operations or redirect the vessel that poses an immediate threat to marine wildlife. Onboard personnel will be watchful as the vessel crosses this path or anytime whales are observed in the area. The vessel operator shall observe the following guidelines:

- Make every effort to maintain distance from sighted marine mammals and other marine wildlife;
- Do not cross directly in front of (perpendicular to) migrating whales or any other marine mammal or turtle;
- When paralleling marine mammals or turtles, the vessel will operate at a constant speed that is not faster than that of the whales;
- Care will be taken to ensure female whales are not separated from their calves; and,
- If a whale engages in evasive or defensive action, the vessel will reduce speed or stop until the animal calms or moves out of the area.

### *Vessel speed*

To obtain good, clean data, normal survey speeds are usually maintained between 2 and 3 knots. This speed is significantly slow in relation to transit speeds maintained by marine mammals and is only a little above the speed necessary to maintain steerage.

### *Limitations on equipment usage*

Limitations on the frequency, pulse length, and pulse rate will be implemented to reduce potential harmful noises. For the sub-bottom profiler, the highest frequency band possible will be used and the shortest possible pulse length and lowest pulse rate (pings per second) will be used.

## **4.0 COLLISION REPORTING**

In the event of a collision between the vessel and a marine mammal or reptile, the vessel operator will document the conditions under which the accident occurred. These conditions include:

- Vessel location (latitude, longitude) when the collision occurred;
- Date and time of collision;
- Speed and heading of the vessel at the time of collision;
- Observation conditions (e.g. wind speed and direction, swell height, visibility in miles or kilometers, and the presence of rain, fog) at the time of collision;
- Species of marine wildlife contacted (if known)
- Whether an observer was monitoring wildlife at the time of collision, and;
- Name of the vessel, owner/operator, and captain officer in charge of the vessel at the time of collision.

After a collision, the vessel shall stop, but will continue with operations if it is deemed that no further damage will result to the animal by doing so. The vessel is not obliged to stand by and may proceed after confirming that it will not further damage the animal by doing so. The vessel shall then communicate by radio or telephone all details to the vessel's base of operations. From the vessel's base of operations, a telephone call shall be placed to the Stranding Coordinator, NMFS, Southwest Region, Long Beach. Alternatively, the vessel captain may contact the NMFS Stranding Coordinator directly using a cell phone.

It is unlikely that the vessel will be asked to stand by until NMFS or California Department of Fish & Game (CDFG) personnel arrive, but this shall be determined by the Stranding Coordinator. Under the Marine Mammal Protection Act, the vessel operator is not allowed to aid injured marine wildlife or recover the carcass unless requested to do so by the NMFS Stranding Coordinator.

Collisions with marine wildlife will be reported promptly to the NOAA Fisheries Stranding Coordinator. The Stranding Coordinator will then coordinate subsequent action, including enlisting the aid of marine mammal rescue organizations, if appropriate.

Although the NOAA Fisheries has primary responsibility for marine mammals in both state and federal waters, CDFG should also be advised that an incident has occurred in state waters affecting a protected species. Reports should be communicated to the federal and state agencies listed below:

**FEDERAL**

Justin Viezbicke  
California Stranding Network Coordinator  
National Marine Fisheries Service  
(562) 980 3230 office  
(808) 313 2803 cell  
[justin.viezbicke@noaa.gov](mailto:justin.viezbicke@noaa.gov)

**STATE**

California Department of Fish & Game  
Long Beach, CA 90802  
(562) 590-5132

California State Lands Commission  
Division of Environmental Planning and  
Management  
Sacramento, CA  
(916) 574-0748  
[slc.ogpp@slc.ca.gov](mailto:slc.ogpp@slc.ca.gov)

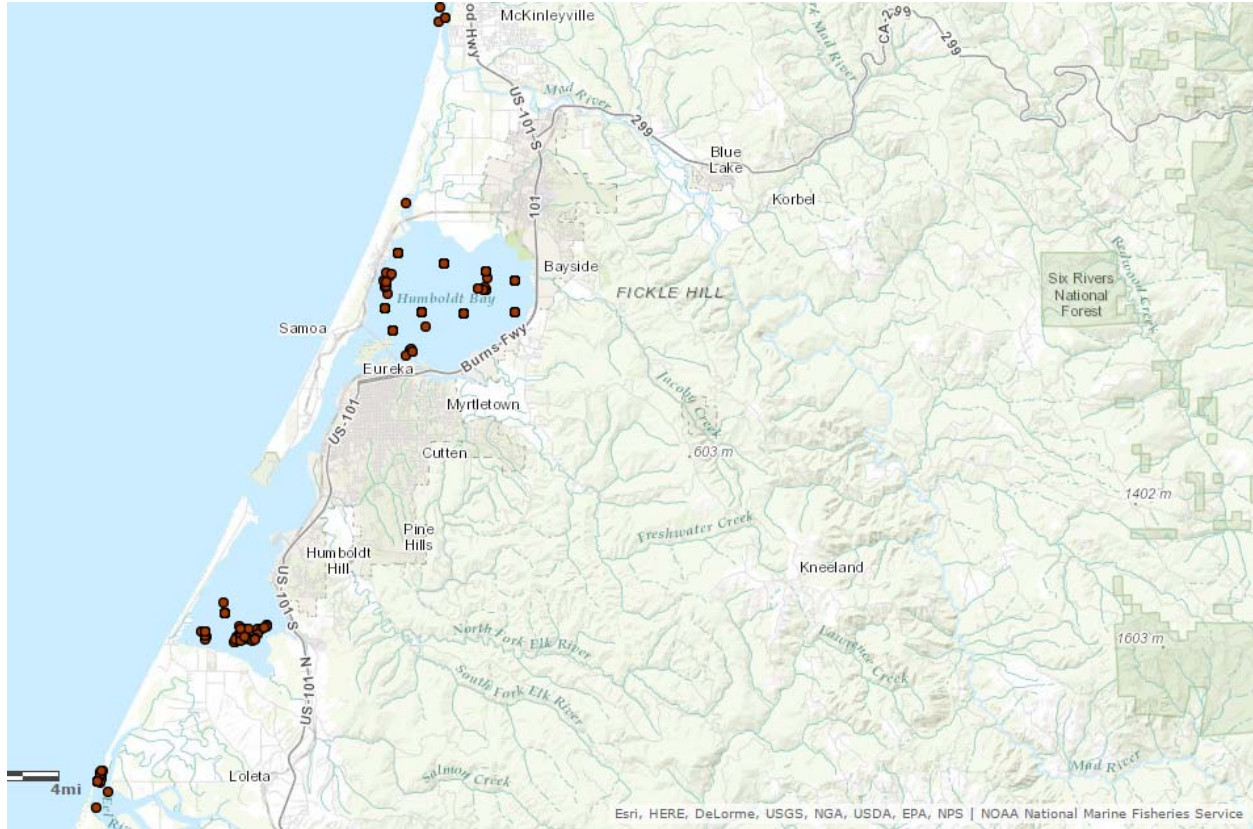
## **5.0 MARINE PROTECTED AREAS**

The proposed survey area does not fall into a designated marine protected area (MPA).

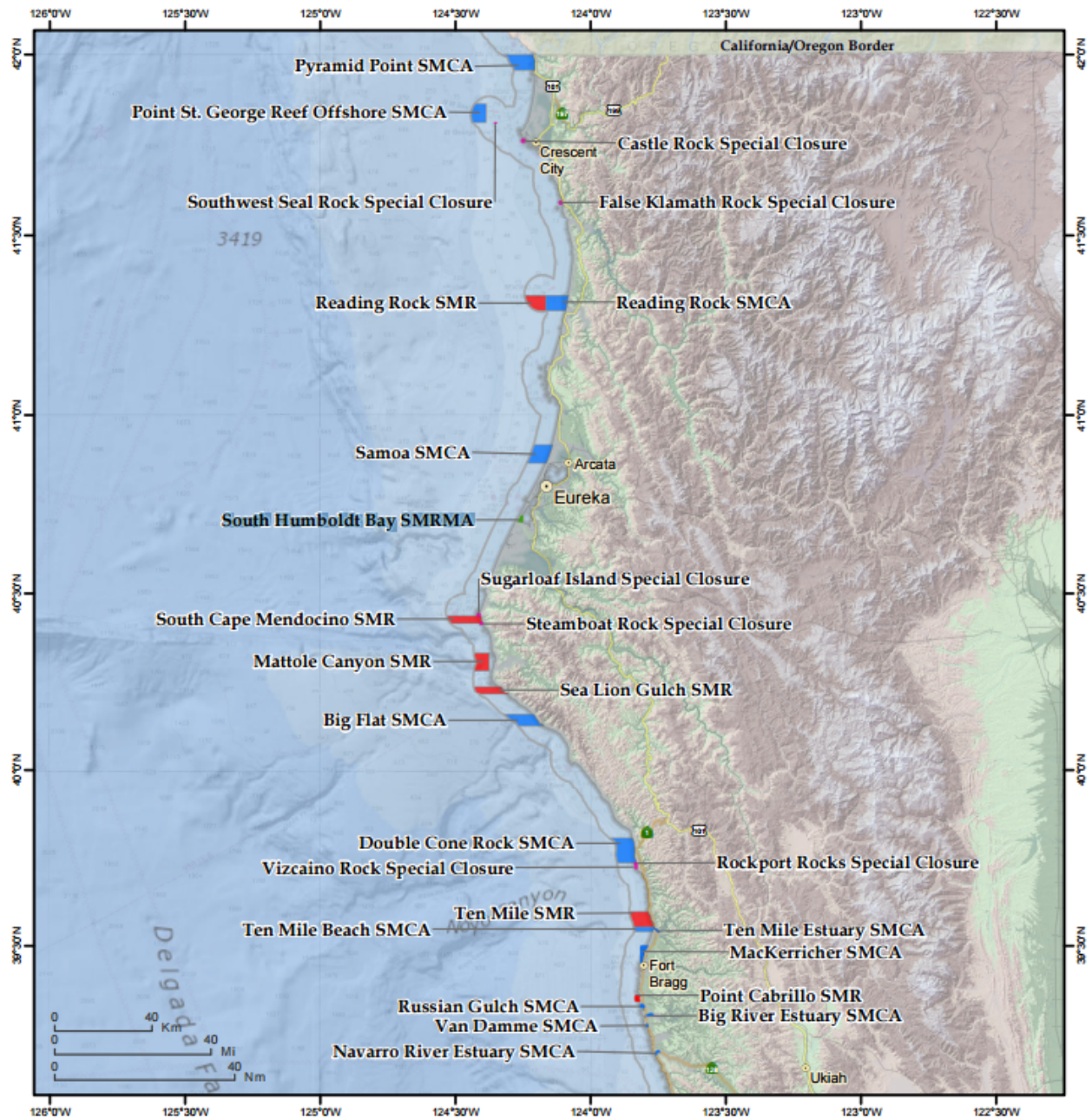
## **6.0 REFERENCES**

California Department of Fish and Game (CDFG) / California Department of Fish and Wildlife (CDFW). 2013. Guide to southern California marine protected areas. 120 pp.

National Oceanic and Atmospheric Administration (NOAA), 2013. Pinniped rookeries and haul-out sites, Southern California. Coastal Response Research Center.



**Figure 1. Location of the known pinniped haul out sites and rookeries in the project vicinity (NOAA, 2013).**



**Figure 2.** Location of MPA's from the California/Oregon border to Alder Creek near Point Arena (CDFG, 2013).

**APPENDIX A**  
**MARINE WILDLIFE MONITOR (MWM) QUALIFICATIONS**

**Shannon Nicole Coates**

6333 Mount Ada Unit 176, San Diego, CA 92111  
**Phone** 858-652-2200 • **E-Mail** shannon.coates@bio-waves.net

**Professional Experience**

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**Passive Acoustic Monitoring Analyst, Northeast Gateway, Confidential Client**  
**2/2015-4/2015**

**Tetra-Tech, Oakland, CA**

Lead bioacoustic data analyst for a hydroacoustic project which was part of a larger study undertaken in Massachusetts Bay. Developed protocols and methods for project analysis in order to determine the presence/absence of marine mammals via call detection in the project area waters. Prepared technical report detailing project results.

**Marine Species Observer**  
**3/2015-5/2015**

**Tierra Data Systems, Inc. Escondido, CA**

Marine species observer for pile-driving activities on U.S. Navy fuel pier replacement project at Naval Base Point Loma, San Diego Bay. Monitor for marine species and their behaviors during construction activities. Responsible for all aspects of data collection during observations, including post-collection data entry and QA/QC. Other duties include assisting in small boats during operations.

**Lead Marine Mammal Bioacoustician and Visual Observer (PODS)**  
**2/2015-3/2015**

**Northwest Fisheries Science Center/NOAA, Seattle, WA**

Lead acoustician during a 3 week long southern resident killer whale tracking survey (PODS) in British Columbia, Washington and Oregon. Operated passive acoustic detection and monitoring equipment 24-hours along with management and training of volunteers. Prepared acoustic cruise report. Participated as a visual observer tracking marine mammals in the region.

**Marine Species Observer**  
**10/2015-Present**

**Okeanis, Moss Landing, CA**

Marine species observer responsible for data collection, photo-identification, processing, and analyses for a long-term project on the population dynamics and social ecology of California Coastal Bottlenose Dolphins in Monterey Bay California.

**Lead Marine Mammal Bioacoustician**  
**7/2014-7/2014**

**Northeast Fisheries Science Center/NOAA, Woods Hole, MA**

Lead acoustician for a one week dedicated beaked whale research survey off George's Bank. Operated passive acoustics detection and monitoring equipment. Acoustically detected and tracked marine mammals for visual identification and abundance estimates. Assisted with setup protocols and managed data collection to include post cruise summary reports. Analyzed

previously collected beaked whale data. Assisted with the development of beaked whale survey and post process protocols.

**Lead Marine Mammal Bioacoustician and Visual Observer (MIMRS)**

**8/2013 – 8/2013**

**Tetra-Tech, Oakland, CA**

Lead acoustician for three week research survey around the Northern Mariana Islands. Operated passive acoustics detection and monitoring equipment. Acoustically detected and tracked marine mammals for visual identification and abundance estimates. Managed acoustic small boat work which included a towed array system for collecting recordings of single species, sonobuoy deployment, visual behavioral observations, and photo-id. Setup cruise protocols and managed post process analysis of data collected. Experience using Mysticetus software.

**Marine Mammal Bioacoustician and Field Assistant (GOALSII)**

**6/2013-7/2013**

**National Marine Fisheries Science Center/NOAA, Seattle, WA**

Participated in a month long survey in the Gulf of Alaska (GOALSII) to estimate abundance and distribution of marine mammals with a primary focus on beaked whales and sperm whales. Operated 24- hour passive acoustics using detection and monitoring equipment. Acoustically detected and tracked marine mammals for visual identification and abundance estimates.

**Marine Mammal Bioacoustician and Field Assistant (PACES)**

**4/2013-5/2013**

**Pacific Islands Fisheries Science Center/NOAA, Honolulu, HI**

Participated in a month long Northern Hawaiian Islands cetacean survey (PACES) to estimate abundance and distribution of false killer whales. Operated passive acoustics detection and monitoring equipment. Acoustically detected and tracked marine mammals for visual identification and abundance estimates. Participated in small boat work which included behavioral observations, photo-id and biopsy sampling

**Lead Marine Mammal Bioacoustician and Visual Observer (GU12-02)**

**6/2012 – 7/2012**

**Southeast Fisheries Science Center/NOAA, Miami, FL**

Lead acoustician for 2 month research cruise. Operated passive acoustics detection and monitoring equipment. Acoustically detected and tracked marine mammals for visual identification and abundance estimates. Participated in small boat work which included behavioral observations, photo-id and biopsy sampling. Setup cruise protocols and trained interns to perform various tasks.

**Marine Mammal Bioacoustician and Field Assistant (PODS)**

**2/2012-3/2012**

**Northwest Fisheries Science Center/NOAA, Seattle, WA**

Participated in a month long southern resident killer whale tracking survey (PODS). Operated passive acoustics detection and monitoring equipment 24-hours. Acoustically detected and tracked killer whales for visual identification and abundance estimates.

**Marine Mammal Bioacoustician and Field Assistant (PICEAS)**

**10/2011-5/2012**

**Pacific Islands Fisheries Science Center/NOAA, Honolulu, HI**

Participated in 2 one month long Palmyra cetacean survey (PICEAS). Operated passive acoustics detection and monitoring equipment. Acoustically detected and tracked marine mammals for visual identification and abundance estimates. Participated in small boat work which included behavioral observations, photo-id and biopsy sampling.

**Marine Mammal Bioacoustician and Visual Observer (SOCAL BRS)**

**8/2010 – 9/2011**

**Cascadia Research, Olympia, WA**

Participated for 2 weeks in 2010 & 5 weeks in 2011 for SOCAL Behavioral Response Survey. Acoustically detected and tracked beaked whales for visual identification and tagging efforts. Assisted in daily cruise reports and post cruise analysis of vocal activity. Participated as a marine mammal observer, including species identification and behavior observations.

**Acoustic Research Associate and Marine Mammal Biologist**

**4/2010 – Present**

**Bio-Waves Incorporated, Encinitas, CA**

Passive acoustic technician for marine mammal monitoring and tracking surveys. Bio-acoustic data analyst involved in review and post processing of data sets. Main focus of research has been on dolphins, beaked whales, sei whales and sperm whales. Experience with Mysticetus, Matlab, Ishmael, and PAMGuard.

**Passive Acoustic Laboratory Technician**

**1/2010 – 1/2012**

**Southwest Fisheries Science Center/NOAA, La Jolla, CA**

Extract and analyze Dall's porpoise echolocation clicks using Matlab (XBAT) and Rainbow Click software. Conducted independent research project (in process of publication) using acoustics to estimate population size of Dall's porpoises.



**Figure A-1. PSO Certificate for Back-up MWM.**

**ECOSYSTEMS MANAGEMENT ASSOCIATES, INC.**

**OIL SPILL CONTINGENCY PLAN**

Submitted to

California State Lands Commission  
Mineral Resources Management Division  
200 Oceangate, 12th Floor  
Long Beach, CA 90802-4331

by

EcoSystems Management Associates, Inc.  
2166 Avenida de la Playa, Suite G  
La Jolla, CA 92037

25 August 2015

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**ECOSYSTEMS MANAGEMENT ASSOCIATES, INC.**

**MANAGEMENT OF ACCIDENTAL DISCHARGE AND VESSEL PROBLEMS  
DURING OFFSHORE/ONSHORE GEOPHYSICAL SURVEY**

**1.0 INTRODUCTION**

At the initiation of each project or project phase, a spill management review will be conducted by the vessels captain who is in all cases the responsible authority. It should be pointed out that any oil spill in United States (U.S.) marine waters shall be reported immediately (on the same day). Reporting information is stated in Section 8.0.

**2.0 OPERATIONAL SPILLS**

Operational spills might involve one or more of the following substances carried on board the vessel: (i) fuel; (ii) lube oil; (iii) hydraulic oil; or (iv) waste oil. The vessel is equipped with a Buffalo Quick-Response Oil Spill Kit, which includes socks for fast spill containment (three 4'' socks), woven polypropylene sheets (15 sheets) for rapid absorption of surface oil and protective gear, protective gloves (1 pair), disposal bag (1), and a set of instructions. This oil spill kit is located in the forward cabin of the vessel. This spill kit is rated to clean up 5 gallons of liquid. All of the liquids (listed below) that could cause a hazardous spill are either in the fuel tank or are located in the engine room of the vessel. Thus, if a spill occurred, these would be contained in the engine room, or if a grounding or instance occurred that punctured the gas tank, this would leak into the water, which is beyond the scope of our cleanup efforts. In the event a spill occurred in the engine room, the oil spill kit would be used to contain the hazardous liquids and the bilge would not be emptied until it could be pumped out at a hazardous waste facility. We do not anticipate a spill of greater than 5 gallons.

**(i) Fuel:**

A spill kit shall be available for use in the event of a spill. If the fuel is spilled on the deck, it shall be immediately removed, bagged and disposed of at an appropriate hazardous waste reception facility. In the event of spillage in the water, the vessel foreman shall notify the Coast Guard and port facility.

**(ii) Lube oil:**

A spill kit shall be available for use in the event of a spill. If the oil is spilled on deck or in the machinery space, it shall be immediately removed, bagged and disposed of at an appropriate hazardous waste reception facility. In the event of spillage in the water, the vessel foreman shall notify the Coast Guard and port facility.

(iii) Hydraulic oil:

A spill kit shall be available for use in the event of a spill. If the oil is spilled on deck or in the machinery space, it shall be immediately removed, bagged and disposed of at an appropriate hazardous waste reception facility. In the event of spillage in the water, the vessel foreman shall notify the Coast Guard and port facility.

(iv) Pipe leakage:

The vessel foreman shall check the piping and rubber hose daily for leakage. Where leakage is found, it shall be repaired immediately. In the event of leakage, the vessel deck engineer shall secure valve(s) at the appropriate tank before repairing the leak. Spilled fuel on the vessel shall be immediately removed, bagged and disposed of at an appropriate hazardous waste reception facility. In the event of spillage in the water, the vessel foreman shall notify the Coast Guard and port facility.

### **3.0 EMPLOYEE TRAINING ON OIL SPILL CONTINGENCY PLAN**

Prior to the launching of the vessel for any activities, all captain and crew members on the vessel will have read the Oil Spill Contingency Plan, understand procedures to be implemented in the event of an oil spill, and know where the oil spill kit is located on the vessel.

### **4.0 SPILLS RESULTING FROM CASUALTIES AND VESSEL PROBLEMS**

In the event of a casualty, the vessel foreman's first priority is to ensure the safety of the vessel's personnel and to initiate actions that may prevent escalation of the incident and marine pollution.

(i) Grounding:

The likelihood of grounding, although remote, could occur when the vessel is working near shore. Should an unforeseeable grounding event occur that causes a spill, the vessel foreman shall immediately report the accident to the Coast Guard and port facility. It is mandatory that the survey company immediately report the incident to the California Office of Emergency Services ("OES").

(ii) Fire or explosion:

If a fire or explosion occurs, the Coast Guard and port facility will be notified immediately by the vessel foreman. While awaiting a response from the USCG or local fireboat agencies, all crewmen shall report to the foreman for a head count. In the event that one or more crewmen are missing, the vessel foreman shall so notify the site safety officer and direct a search for the missing crew where practical. If one or more crewmen are injured, the foreman shall

render first aid with the assistance of available crewmen. The foreman shall also notify the site safety officer of any injuries sustained as a result of the fire or explosion.

The crew will fight the fire with portable fire extinguishers if this can be done safely. The foreman shall determine if the fire or explosion warrants abandoning the vessel. If it is determined that the vessel is to be abandoned, the crew shall don life vests and safely enter the water or available life raft.

If there is a spill as a result of the fire or explosion, the vessel foreman shall immediately report the incident to the Coast Guard and port facility. It is mandatory that the survey company immediately report the incident to the OES.

(iii) Collision:

A collision is unlikely to cause a spill unless the vessel sinks or the fuel tank is “holed.” If it is determined that the vessel is to be abandoned, the crew shall don life vests and safely enter the water or available life raft.

If the collision causes a spill from the fuel tank, the foreman shall immediately report the incident to the site safety officer, Coast Guard, and port facility. It is mandatory that the survey company immediately report the incident to the OES.

(iv) Vessel submerged/foundered:

If the vessel is submerged or foundered to the extent that it, or parts of it, is submerged, all measures shall be taken to evacuate all persons on board. Avoid contact with any spilled oil. Alert other vessels/vessels and/or the nearest coastal state for assistance in rescuing lives and the vessel as far as possible.

## **5.0 SPILLS RESULTING FROM VESSEL FUELING**

All vessel fueling will be conducted on land at a gas station or at an approved docking facility. No cross vessel fueling will be performed.

## **6.0 PRIORITY ACTIONS TO ENSURE PERSONNEL AND VESSEL SAFETY**

Safety of vessel personnel and the vessel are paramount. In the event that a crewman's injuries require outside emergency assistance, the site safety officer shall be contacted immediately and emergency personnel contacted. While awaiting emergency assistance, the survey company's vessel personnel will render first aid and/or CPR.

## **7.0 MITIGATING ACTIVITIES**

If safety of both the vessel and the personnel has been addressed, the vessel foreman shall care for the following issues:

- Assessment of the situation and monitoring of all activities as documented evidence.
- Care for further protection of the personnel, use of protective gear, assessment of further risk to health and safety.
- Containment of the spilled material by absorption and safe disposal within leakproof containers of all used material onboard until proper delivery ashore, with due consideration to possible fire risk.
- Decontamination of personnel after finishing the cleanup process.

All personnel shall refer to the MSDS's on board for additional information.

## **8.0 MEASURES TO BE TAKEN IN THE EVENT OF CASUALTY**

### **(i) Response to collision**

The vessel foreman and crew shall ensure that the following actions are taken.

- When there is no immediate danger to their own vessel and crew, rescue crew of the other vessel.
- Investigate the damaged area of the vessel and the ingress of water and take emergency measures to prevent the damage from becoming worse.
- When ingress of water is found as a result of damage investigation, take necessary measures to prevent water from coming in, or pump out the water already taken in, according to the position and amount of water taken in. Such measures include the closing of water-tight doors, inserting wooden plugs, use of collision mats, cement box, strengthening of bulkhead, and use of water discharge pumps.
- When water penetration is severe even after countermeasures are taken and there is a danger of the vessel sinking, consider intended grounding on an appropriate shore.

### **(ii) Response to grounding**

If the vessel runs aground, the vessel foreman and crew shall muster and the following steps should be taken immediately.

#### **1.0 Eliminate all avoidable sources of ignition and ban all smoking on board.**

Further actions:

- (1) Carry out a visual inspection of the vessel to determine the severity of the situation.
- (2) Take soundings around the vessel to determine the nature and gradient of the seabed.
- (3) Check difference in the tidal ranges at the grounding site.

(4) Evaluate tidal current in the grounding area.

Having assessed the damage that the vessel has sustained, and taking into account the effects of hull stress and stability, the foreman should decide whether any action can be taken to avoid further spillage, such as:

- (1) Transfer of cargo and bunkers internally. If the damage is limited—for example, to one or two tanks—consideration should be given to transfer of liquid from damaged to intact tanks.
- (2) Review existing and forecasted weather conditions to see if they will adversely affect the vessel.
- (3) Evaluate the possibility of transferring cargo to barges or other vessels, and request such assistance accordingly.
- (4) Trim or lighten the vessel sufficiently to avoid damage to intact tanks, thereby avoiding additional pollution from spillage of oil or noxious liquid substance.

The foreman should obtain information about the situation, including the following.

- (1) Tides and currents
- (2) Weather, including wind, state of sea and swell.
- (3) Any weather forecast changes.
- (4) Nature of the bottom.
- (5) Depth of water around the vessel, the calculated buoyancy needed to refloat, draught, and trim after refloating.
- (6) Condition of the vessel, including stresses on the hull.

Strict safety precautions should be taken before entering any empty space, in order to avoid any risks from toxic fumes or oxygen deficiency.

Soundings should be taken around the vessel to determine the extent of the grounding/stranding as accurately as possible. If the sea is too rough for accurate sounding, it may be possible to measure the distance from the seabed to the main deck. By marking this on a longitudinal section from the general arrangement drawings, the extent of grounding can be determined.

If the vessel is structurally intact, an immediate attempt may be made to refloat her with or without assistance. In deciding whether to make an immediate attempt to refloat, the foreman should consider the use of the tugs and ground tackle as well as the possible damage that might be caused to the vessel.

Immediate refloating may be the best course to adopt even if the vessel has sustained bottom damage. However, if there are signs of excessive hogging, sagging or of undulations in the sides of the hull, more careful consideration is required before attempting to refloat the vessel. In these circumstances, lightening of the vessel may reduce the risk of further damage and pollution.

(iii) Response to submerged/Foundered

The vessel foreman and crew shall muster and ensure that the following actions are taken immediately.

- If the vessel is wrecked to the extent that it or parts of it are submerged, take all measures to evacuate all persons on board.
- Avoid contact with any spilled oil.
- Alert other vessels and/or the nearest coastal state for assistance in rescuing lives.
- All openings in hull and superstructures are to be checked for watertight integrity. Ensure that all water doors, sewage and other relevant damage control valves are closed.
- Fill bottom tanks with ballast low side first.
- Should the situation appear to be deteriorating, urgency or distress messages should be dispatched as appropriate.

The nearest hospital to our survey area is the San Pedro Urgent Care Facility, located at 1499 W. 1st St. San Pedro, California 90732. The number is: 310-241-2590.

## **9.0 REPORTING AN OIL SPILL TO STATE AND FEDERAL AGENCIES**

Any oil spill in U.S. marine waters shall be reported immediately (on the same day) to the state and federal phone numbers below:

West Coast Oil Spill hot-line	800-OILS-911, <i>or</i>
Department of Fish and Game CalTIP	888-CFG-CALTip
(Californians Turn In Poachers & Polluters)	(888-334-2258). <i>and</i>
U.S. Coast Guard National Response Center	800-424-8802
California Office of Emergency Services (OES)	800-OILS-911 or 800-852-7550

During the phone call, the following information will be given over the phone.

- a. Name and telephone number of caller.
- b. Where did you see the spill?
- c. What do you think was spilled (oil, gas, diesel, etc.)?
- d. Can you estimate the size of the spill?
- e. The date & time you saw this spill? (PLEASE report on the same day).
- f. Did you see any oiled or threatened wildlife?
- g. Do you have any information or thoughts about who spilled the material?
- h. What, if any, activity did you observe at the spill site?

After taking the necessary actions, the spill will be reported in writing to the Governor's Office of Emergency Services on their forms.

Additionally, California Department of Fish and Game certified wildlife rescue/response organizations will be contacted about the spill. In the Palos Verdes area, these include the following contacts:

Oiled Wildlife Care Network  
1-877-UCD-OWCN

Animal Advocates  
323-651-1336

California Wildlife Center  
818-222-2658  
All Wildlife Rescue & Education  
562-434-0141

South Bay Wildlife Rehab  
310-378-9921

## **10.0 DIVER CHECKLIST**

### **Prerequisites:**

1. Copy of dive manual shall be at work site.
2. Site safety has reviewed work plan.
3. A written pre-job brief has been approved by the manager or designee.
4. All prerequisites required in the dive manual have been met.
5. Verify that a rescue plan is in place.
6. All procedures, drawings, and work documents are available.
7. All video and communication equipment is operable.
8. All diver qualifications are active.
9. Any known hazards have been identified.
10. Verify that all hazard barriers are in place.
11. Verify that waves and tidal conditions will not impact diving operations.
12. A diving supervisor shall be present at all times while the diver is in the water.

### **Diver Equipment Checkout:**

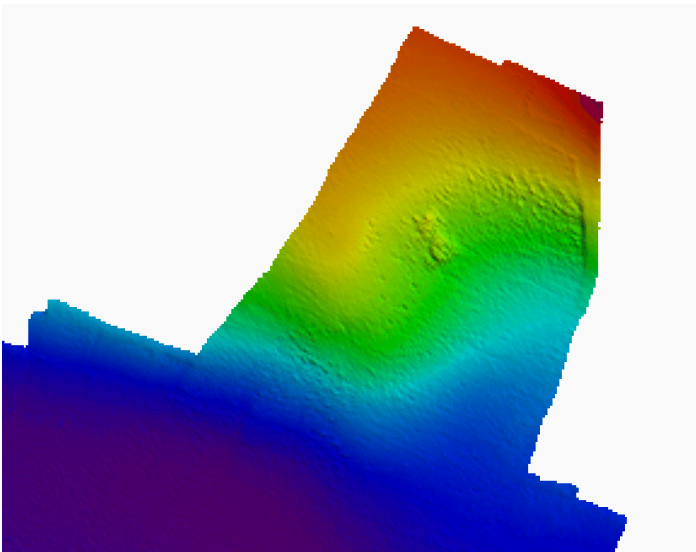
1. Ensure that there are two sources of breathing air available.
2. Ensure that air compressor fuel tank and oil levels are full prior to diving.
3. Ensure that breathing air compressors are not located in an area where the induction of harmful gases is possible.
4. Ensure that the Dive Supervisor inspects the diver's equipment per their daily equipment checklist.
5. Ensure that diver communication equipment checkout is performed.

### **Placing a Diver in the Water:**

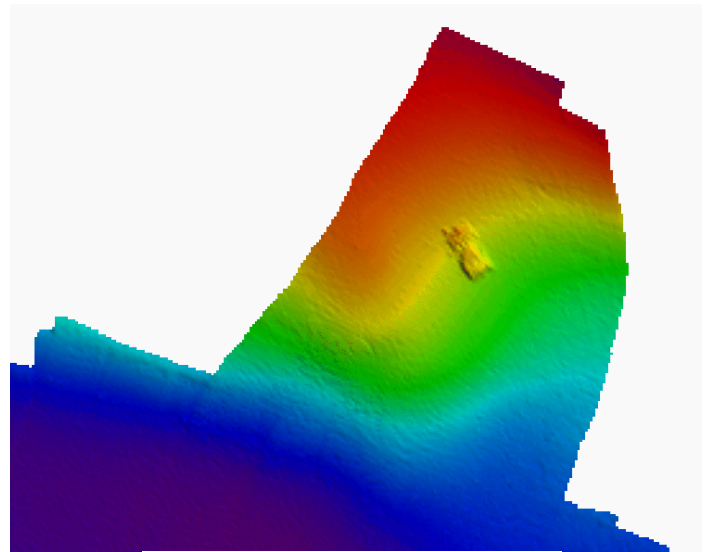
1. Notify the control room prior to commencing dive activities. Also:
  - a. Verify method of communication to be used with the control room.
  - b. Notify control room at conclusion of daily dive activities.
2. Verify that standby divers are in the immediate area and in a state of preparedness to enter the water within two minutes.
3. If SCUBA equipment is used, two divers shall be in the water.
4. Remove the diver from the water if any operational changes are encountered.

The R/V Almar MBES patch test was conducted in the north end of Lake Washington over a known calibration site. The patch tests was processed onboard immediately after patch test acquisition using CARIS HIPS 8.1.8 Calibration Editor. Final offsets are in the table below.

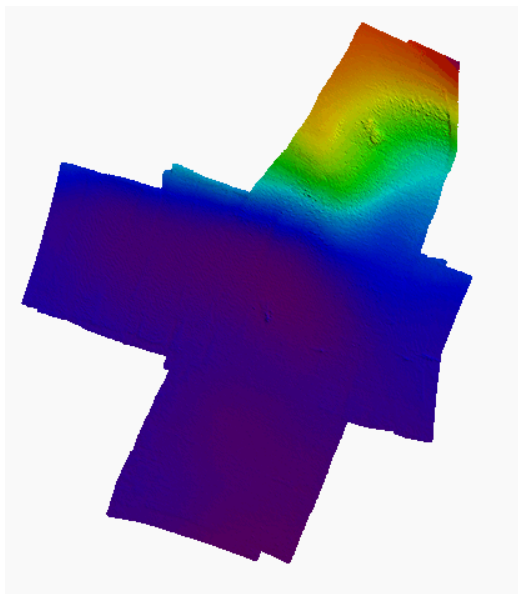
<b>R/V Almar offsets</b>				
	Latency (ms)	Pitch (°)	Roll (°)	Yaw (°)
Final offsets	0.00	-2.05	-0.06	-1.92



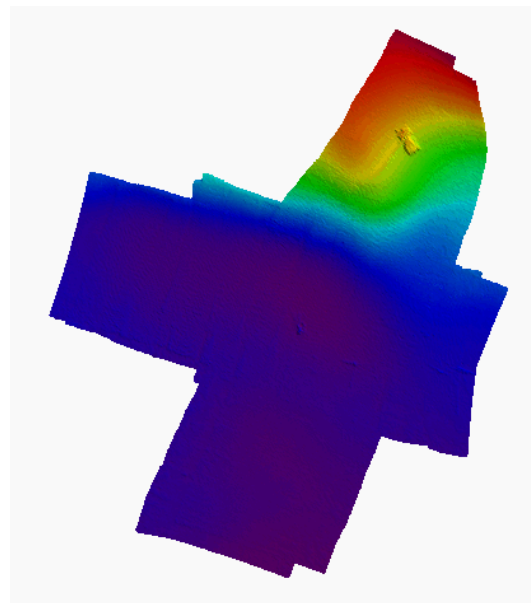
**Figure 1** Pre-offset calibration site



**Figure 2** Post offset calibration site



**Figure 3** Pre-offset full surface



**Figure 4** Post offset full surface